or act to automatically remove the player from the game or move the player to a new circle of players. In one embodiment, a machine learning process may use image analysis and metadata processing to identify features to be used as inputs to a machine learning engine. The machine learning engine may use classifiers to identify the types of features and to understand what behavior is typically occurring by one or more of the players. A model can be built to learn over time what actions by players mean and how to classify the actions, e.g., as actions resembling those of a griefer, an expert, an aggressor, etc. This information can be made available to spectators so that the spectators can use this information to make voting decisions regarding the players. For example, if an interface identifies a certain player as either causing griefing or being likely to cause griefing, the spectators can watch the player and make decisions on whether to vote him or her off the game or to move the player to a different circle of players. In other embodiments, the system can automatically remove the player from the game responsive to either output from a machine learning model or inferences derived from the output.

FIG. **5** illustrates an embodiment of an Information Service Provider architecture. Information Service Provider (ISP) **970** delivers a multitude of information services to users **982** geographically dispersed and connected via network **986**. An ISP can deliver just one type of service, such as stock price updates, or a variety of services such as broadcast media, news, sports, gaming, etc. Additionally, the services offered by each ISP are dynamic, that is, services can be added or taken away at any point in time. Thus, the ISP providing a particular type of service to a particular individual can change over time. For example, a user may be served by an ISP in near proximity to the user while the user is in her home town, and the user may be served by a different ISP when the user travels to a different city. The home-town ISP will transfer the required information and data to the new ISP, such that the user information "follows" the user to the new city making the data closer to the user and easier to access. In another embodiment, a master-server relationship may be established between a master ISP, which manages the information for the user, and a server ISP that interfaces directly with the user under control from the master ISP. In another embodiment, the data is transferred from one ISP to another ISP as the client moves around the world to make the ISP in better position to service the user be the one that delivers these services.

ISP **970** includes Application Service Provider (ASP) **972**, which provides computer-based services to customers over a network (e.g., including by way of example without limitation, any wired or wireless network, LAN, WAN, WiFi, broadband, cable, fiber optic, satellite, cellular (e.g. 4G, 5G, etc.), the Internet, etc.). Software offered using an ASP model is also sometimes called on-demand software or software as a service (SaaS). A simple form of providing access to a particular application program (such as customer relationship management) is by using a standard protocol such as HTTP. The application software resides on the vendor's system and is accessed by users through a web browser using HTML, by special purpose client software provided by the vendor, or other remote interface such as a thin client.

Services delivered over a wide geographical area often use cloud computing. Cloud computing is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. Users do not need to be an expert in the technology infrastructure in the "cloud" that supports them. Cloud computing can be divided into different services, such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Cloud computing services often provide common business applications online that are accessed from a web browser, while the software and data are stored on the servers. The term cloud is used as a metaphor for the internet (e.g., using servers, storage and logic), based on how the internet is depicted in computer network diagrams and is an abstraction for the complex infrastructure it conceals.

Further, ISP **970** includes a Game Processing Server (GPS) **974** which is used by game clients to play single and multiplayer video games. Most video games played over the internet operate via a connection to a game server. Typically, games use a dedicated server application that collects data from players and distributes it to other players. This requires a separate server to host the server application. In another embodiment, the GPS establishes communication between the players and their respective game-playing devices exchange information without relying on the centralized GPS. In yet another embodiment, the GPS can be used to distribute game copies to nodes via download and to facilitate a discovery process by which nodes can initiate a peer-to-peer connection with other nodes interested in playing a game in a serverless environment.

Dedicated GPSs are servers which run independently of the client. Such servers are usually run on dedicated hardware located in data centers, providing more bandwidth and dedicated processing power. Dedicated servers are the preferred method of hosting game servers for most PC-based multiplayer games. Massively multiplayer online games run on dedicated servers usually hosted by the software company that owns the game title, allowing them to control and update content.

Broadcast Processing Server (BPS) **976** distributes audio or video signals to an audience. Broadcasting to a very narrow range of audience is sometimes called narrowcasting. The final leg of broadcast distribution is how the signal gets to the listener or viewer, and it may come over the air as with a radio station or TV station to an antenna and receiver, or may come through cable TV or cable radio (or "wireless cable") via the station or directly from a network. The internet may also bring either radio or TV to the recipient, especially with multicasting allowing the signal and bandwidth to be shared. Historically, broadcasts have been delimited by a geographic region, such as national broadcasts or regional broadcast. However, with the proliferation of fast internet, broadcasts are not defined by geographies as the content can reach almost any country in the world.

Storage Service Provider (SSP) **978** provides computer storage space and related management services. SSPs also offer periodic backup and archiving. By offering storage as a service, users can order more storage as required. Another major advantage is that SSPs include backup services and users will not lose all their data if their computers' hard drives fail. Further, a plurality of SSPs can have total or partial copies of the user data, allowing users to access data in an efficient way independently of where the user is located or the device being used to access the data. For example, a user can access personal files in the home computer, as well as in a mobile phone while the user is on the move.

Communications Provider **980** provides connectivity to the users. One kind of Communications Provider is an Internet Service Provider (ISP) which offers access to the Internet. The ISP connects its customers using a data transmission technology appropriate for delivering Internet Protocol datagrams, such as dial-up, DSL, cable modem, fiber,